# NewsRelease

National Aeronautics and
Space Administration

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## SYNTHETIC VISION COULD HELP PILOTS STEER CLEAR OF FATALITIES

NASA and industry are developing revolutionary cockpit displays to give airplane crews clear views of their surroundings in bad weather and darkness, which could help prevent deadly aviation accidents.

Limited visibility is the greatest factor in most fatal aircraft accidents, said Michael Lewis, director of the Aviation Safety Program at NASA's Langley Research Center in Hampton, VA. NASA has selected six industry teams to create Synthetic Vision, a virtual-reality display system for cockpits, offering pilots an electronic picture of what's outside their windows, no matter the weather or time of day.

"With Global Positioning Satellite signals, pilots now can know exactly where they are," said Lewis. "Add super-accurate terrain databases and graphical displays and we can draw three-dimensional moving scenes that will show pilots exactly what's outside. The type of accidents that happen in poor visibility just don't happen when pilots can see the terrain hazards ahead."

The NASA Aviation Safety Program envisions a system that would use new and existing technologies to incorporate data into displays in aircraft cockpits. The displays would show hazardous terrain, air traffic, landing and approach patterns, runway surfaces and other obstacles that could affect an aircraft's flight.

Industry teams submitted 27 proposals in four categories: commercial transports and business jets, general aviation aircraft, database development and enabling technologies. NASA and researchers from the Federal Aviation Administration and Department of Defense evaluated the proposals' technical merit, cost and feasibility.

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NASA has committed $5.2 million that will be matched by $5.5 million in industry funds to advance Synthetic Vision projects over the next 18 months. More money is expected to be designated later to accelerate commercialization and make some systems available within four to six years.

Among the team leaders selected for the first phase of the program are: Rockwell Collins, Inc., Cedar Rapids, IA; AvroTec, Inc., Portland, OR; Research Triangle Institute, Research Triangle Park, NC; Jeppesen-Sanderson, Inc., Englewood, CO; the Avionics Engineering Center of Ohio University, Athens, OH; and Rannoch Corporation, Alexandria, VA.

Rockwell Collins, Inc. will receive funds to develop synthetic vision for airliners and business jets. The AvroTec, Inc. and Research Triangle Institute groups will use their awards to create technologies for a general-aviation synthetic vision system. A team led by Jeppesen-Sanderson, Inc. will receive funds to develop terrain database requirements and system approaches. The Avionics Engineering Center of Ohio University and Rannoch Corporation will use their awards to design specific component technologies for Synthetic Vision.

The Aviation Safety Program is a partnership with the FAA, aircraft manufacturers, airlines and the Department of Defense. This partnership supports the national goal announced by President Clinton to reduce the fatal aircraft accident rate by 80 percent in 10 years and by 90 percent over 25 years.

Because of advances in the last 40 years, commercial airliners are already the safest of all major forms of transportation. But with an accident rate that has remained relatively constant in the last decade and air traffic expected to triple over the next 20 years, the U.S. government wants to prevent a projected rise in the number of aircraft accidents.

For a complete list of industry teams please check the Internet at:

**http://oea.larc.nasa.gov/news_rels/1999/May99/99-025.html**

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# SYNTHETIC VISION INDUSTRY TEAMS

## Proposal selected for Business Jet and Commercial Transport Concepts:

**Rockwell Collins, Inc., Cedar Rapids, Iowa**
Jeppesen-Sanderson, Inc., Englewood, Colorado
The Boeing Company, Seattle, Washington
American Airlines, Dallas-Ft. Worth, Texas
Delft University of Technology, Delft, The Netherlands
Embry-Riddle Aeronautical University, Daytona Beach, Florida
Flight Dynamics, Inc., Portland, Oregon

## Proposals chosen for General Aviation System Concepts:

**AvroTec, Inc., Portland, Oregon**
Avidyne Corp., Lexington, Massachusetts
Lancair/PAC USA, Bend, Oregon
Massachusetts Institute of Technology, Cambridge, Massachusetts
Raytheon Aircraft, Wichita, Kansas
Seagull Technologies, Los Gatos, California
FAA Civil Aeronautical Medical Institute (CAMI), Oklahoma City, Oklahoma

**Research Triangle Institute, Research Triangle Park, N.C.**
Archangel Systems, Inc., Auburn, Alabama
Flight International, Inc., Newport News, Virginia
Seagull Technologies, Inc., Los Gatos, California
Dubbs & Severino, Inc., Irvine, California
Crew Systems, Inc., San Marcos, Texas
FLIR Systems, Inc., Portland, Oregon

## Proposal selected for Database Development:

**Jeppesen-Sanderson, Inc., Englewood, Colorado**
Marconi ADR, Pennsauken, New Jersey
Darmstadt University of Technology, Darmstadt, Germany
Allied Pilots Association, Arlington, Texas
American Airlines, Dallas, Ft. Worth, Texas
Alaska Airlines, Seattle, Washington
Lufthansa German Airlines, Frankfurt/Main, Germany

## Proposals selected for Enabling Technologies:

**Avionics Engineering Center of Ohio University, Athens, Ohio**

**Rannoch Corp., Alexandria, Virginia**